Prosciurus lohiculus 的分类位置

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关键词 亚洲 渐新世 圆柱鼠科 山河狸科

内 容 提 要

Prosciurus lohiculus 过去被不同的作者归入 Prosciurus 或 Plesispermophilus。 笔者认为它既不是 Prosciurus,也不是 Plesispermophilus,而代表一新属: 异鼠属 Anomoemys。 此属不能归入 Aplodontidae,而应是 Cylindrodontidae 科的成员。

Prosciurus lohiculus 是 Matthew 和 Granger (1923) 根据在蒙古中渐新统 Hsanda Gol 组中发现的上颌骨确定的。六十多年来,关于这个种的分类位置,一直存在着争论。起因最初是因为 Argyropulo (1939) 将在苏联哈萨克斯坦上渐新统发现的一件下颌骨归入这个种: Prosciurus sp. (?lohiculus)。 Stehlin 和 Schaub (1951, p. 278) 认为哈萨克斯坦的下颌应属 Plesispermophilus。 Wood (1962, p. 236) 将蒙古的上颌骨与苏联哈萨克斯坦的下颌一起归入 P. lohiculus,但改为 Plesispermophilus 属。 Mellett (1968, p. 6) 和 Shevyreva (1976, p. 22) 大体上也是这种意见。Kowalski (1974, p. 153) 明确指出哈萨克斯坦的下颊齿不属于 P. lohiculus,而将在蒙古 Tatal Gol 地区中渐新统发现的几件下颌归入 Prosciurus lohiculus。 Schmidt-Kittler 和 Vianey-Liaud (1979) 赞同 Kowalski 的看法,并且指出:如果 Argyropulo 描述的哈萨克斯坦的下颌是 Plesispermophilus 的话。蒙古 Hsanda Gol 组的 P. lohiculus 上颊齿则应归入 Prosciurus。 王伴月等(Wang 和 Heissig,1984)也赞同后一种意见。显然,这些争论都只涉及到该种属于 Prosciurus 属或 Plesispermophilus 属,并未离开 Prosciurinae 的范围。

最近笔者研究了内蒙古渐新世啮齿动物化石。 其中有一件上颌骨 (V7956) 显然是属于 $P.\ lohiculus$ 的. 在研究该化石的过程中,笔者对 $P.\ lohiculus$ 的正型标本、Kowalski (1974) 描述过的蒙古标本的模型和 Argyropulo (1939)。描述过的哈萨克斯坦标本的模型进行了比较详细地观察研究,并将它们与北美真正的 Prosciurus 标本或模型进行了比较。

笔者认为,Kowalski (1974) 描述的采自蒙古中渐新统的 No. MgM-III/71,No MgM-III/72 和 No. MgM-III/74 等下颌在颊齿的大小,单面高冠,横脊较发达,并有相应的发育的纵脊等特点与 P. lohiculus 的正型标本的上颊齿是能互相对应的。与哈萨克斯坦的下颌的颊齿显然不同。后者颊齿齿冠较低,无单面高冠现象,横脊较弱,主尖较明显,也无相应的纵向结构等。这些都表明它代表不同于 P. lohiculus 的另一种类型。笔者赞同

Kowalski (1974) 和 Schmidt-Kittler 和 Vianey-Liaud (1979) 的意见:哈萨克斯坦的下颌 (No. 1442/93) 很可能是一种 Plesispermophilus,而蒙古的 No. MgM-III/71, No. MgM-III/72 和 No. MgM-III/74 则可能代表 P. lohiculus 的下颌。

将 P. lohiculus 归入 Plesispermophilus 的作者们主要是根据哈萨克斯坦的下颊齿的特点。正如上面已指出的,哈萨克斯坦的下颌代表不同于 P. lohiculus 的种类。这样,将 P. lohiculus 归入 Plesispermophilus 的基础就失去了。加之,Schmidt-Kittler 和 Vianey-Liaud (1979, p. 73) 研究了在欧洲渐新统发现的 Plesispermophilus 的上颊齿,进一步证明 P. lohiculus 的上颊齿与 Plesispermophilus 的上颊齿的区别的确是很明显的。因此, P. lohiculus 显然不能归入 Plesispermophilus 属。

关于 P. lohiculus 是否能归人 Prosciurus 的讨论。在 Aplodontidae 科中,与 P. lohi. culus 的颊齿形态比较相似的属无疑是 Prosciurus。如在始啮型头骨、齿式、P3 为单尖、P4 臼齿化、以及颊齿具四脊、无中脊和外脊、次尖不明显、后小尖大、下后附尖发达、下次尖增 大等特点上两者都是相似的。 这 也 是 为 什么过 去将 P. lohiculus 归入 Prosciurus 的原 因。然而, P. lohiculus 的颊齿与 Prosciurus 的颊齿之间仍存在很显著的区别: 除了前人 所指出的 P. lohiculus 具有连接原小尖、后小尖和后边脊的纵脊外,在 P. lohiculus: 1)频 齿为明显的单面高冠,而 Prosciurus 为低冠齿;2)原尖前后伸长,经磨蚀,原尖(原尖-次尖 区)呈前后伸长稍向内凸的脊形,颊齿内侧较长,而 Prosciurus 的原尖呈锥形,向内明显凸 出,颊齿内面较尖突;3)原尖与前边脊及后边脊连续,彼此间无明显界线,而 Prosciurus 的 前边脊及后边脊内端或多或少膨大,或向内突出超过原尖棱,与原尖有明显的界线;4)无 原始 aplodontids 所特有的游离的原尖前臂的任何痕迹; 5)横脊较发达,不仅原脊和后脊 较粗壮,而且前边脊及后边脊也很发达,几乎与原脊和后脊等高,磨蚀面在同一水平上, 而 Prosciurus 的齿尖较齿脊发育,原脊和后脊较细弱,前边脊及后边脊也较原脊和后脊 低;6)原脊和后脊分别连接前尖和原小尖,后尖和后小尖的中央,在 Prosciurus 原脊连接 原小尖后缘,而后脊则与后小尖的前缘相连;7)前尖和后尖不太明显,前后压缩,约 呈横脊状, Prosciurus 的前尖和后尖呈三角形等。 这些区别表明, P. lohiculus 不能归入 Prosciurus, 而应代表一新属。我们将它取名为异鼠 Anomoemys。

关于 Anomoemys 的分类位置。首先需要指出的是,上述的 A. lohiculus 与 Prosciurus 的区别特征,也是 A. lohiculus 与整个 Aplodontidae 的不同之处。显然将 Anomoemys 归入 Aplodontidae 也是不合适的。

除了 Aplodontidae 之外,与 Anomoemys 的齿式和颊齿形态相似的啮齿动物还有 Sciuridae 和 Cylindro-dontidae。关于 Anomoemys lohiculus 与 sciurids 在颊齿上的相似,早在 1923 年,Matthew 和 Granger 在确立 P. lohiculus 种时就已指出过 (p. 7)。但由于两者的头骨属于不同类型,就将两者从根本上区分开了。

Anomoemys 的颊齿与较原始的 Cylindrodontidae 的颊齿比较,两者除了在 Anomoemys 与 Prosciurus 的相似特点上也彼此相似外,两者还共有一些不同于 Prosciurus 的特点(如表1第2一第8项)。 这些都是 Anomoemys 与 cylindrodontids 在上颊齿上的近裔共性。此外,Anomoemys 在颊齿后脊不完全,后小尖与后边脊相连等特点上与 cylindrodontids 的较原始的属如 Pareumys, Jaywilsonomys 和原始的 Pseudocylindrodon (如 P. tobeyi)等

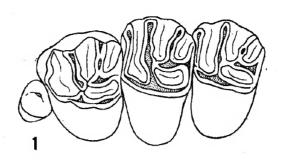
	cylindrodontids 原始种类	Anomoemys	Prosciurus
1. P ⁴ 前附尖	无	第 一明显	明显
2. 颊齿齿冠	单面高冠	单面高冠	低冠 /
3.原脊和后脊	发达,分别与原小尖或后小	发达,分别与原小尖或后小	细弱,分别与原小尖后缘或
	尖中央相连	尖中央相连	后小尖前缘相连
4.前、后边脊	很 发达,约与原脊和后 脊等	很发达约与原脊和后脊等	较低弱,明显低于原脊和后
	高;四横脊磨蚀面在同一平	高;四横脊磨蚀面在同一平	脊,四横脊磨蚀面不在同一
	面上	面上	平面上
5.原尖	前后伸长,原尖-次尖区磨蚀	前后伸长,原尖-次尖区磨蚀	约呈锥形
	后呈纵向的脊	后呈纵向的脊	
6.原尖与前、后边脊内端	相连续,彼此无明显界线	相连续,彼此无明显界线	不连续,彼此有明显界线
连接关系			
7.游离的原尖前臂	无	无	有
8.前尖和后尖	前后压缩约呈横脊状	前后压缩约呈横脊状	约呈三角锥状
9.下颊齿	前缘与牙齿纵轴垂直	前缘与牙齿纵轴垂直	前缘与牙齿纵轴斜交
10.三角座与跟座	约等高	约等高	三角座高于跟座
11.下原尖	直立,位于齿前端	直立,位于齿前端	匍匐状,位置后移
12.下后尖	不向前移	不向前移	明显向前移
13.下次尖	髙冠,主要向前外侧伸	高冠,主要向前外侧伸	齿冠不增高, 主要向后外方
			膨大
14.P. 下后脊 I	通常缺失	或多或少存在	通常缺失
15.下臼齿下后脊 I	直	直	呈向前凸的弧形
16.下次脊	完全、发达	完全、发达	较弱,通常不完全
17.下外脊	直	直	呈波状曲线
18.下中尖	无	无	发达
19.下外中脊	无	无	发达

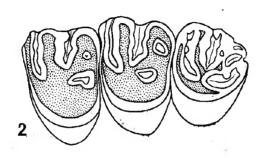
表 1 Anomoemys Prosciurus 与 cylindrodontids 原始种类的部分颊齿特征比较

相似。特别是 Pareumys lewisi Black (1974, p. 155—156 图 6) 也具有通过后小尖连接原脊和后边脊的纵脊。 这样 Anomoemys 与 cylindrodontids 在上颊齿上的区别就只剩下 Anomoemys 的 P⁴ 具前附尖这一特点了(图 1)。

下颊齿也有类似的情况。Anomoemys 的下颊齿约呈次长方形,横脊约等高,下外脊较直,不象 Aplodontidae 的那样呈波状曲线,也没有后者那样发达的下中尖和下外中脊。此外,Anomoemys 的下后尖不特别向前移,下原尖位于齿的前端,直立、不呈葡匐状,下后脊 I 直,下后脊 II 完全,下次尖高冠,并主要向前外侧延伸的特点都是与 Cylindrodontidae,特别与 Pseudocylindrodon 和 Ardynomys 的相似,而与 Prosciurus 以及 Aplodontidae 的不同。然而,需要指出的是 Anomoemys 的 P_4 具有下后脊 I 的特点是与已知的 cylindrodontida 的不同的(图 2)。

从上面的比较和分析可以看出,Anomoemys 无论上颊齿还是下颊齿,其基本特征都是与 Cylindrodontidae 一致的。只是 Anomoemys 在 P⁴ 具前附尖和 P₄ 具下后脊 I 的特点上与 cylindrodontidae 的不同。但是上述特点在 Cylindrodontidae 的 DP⁴ 和 DP₄ 上也是明显存在的。(如 Cylindrodon fontis, Wood 1937,p. 203,图 29 和 30,和 Pseudocylindrodon tobeyi, Black, 1970, p. 203—208,图 1 和 11)。 Butler (1941, p. 444) 曾指出:"在颊齿的进化过程中,功能上最重要的牙齿是最进步的,而功能上最不重要的前面的前





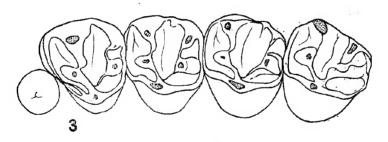
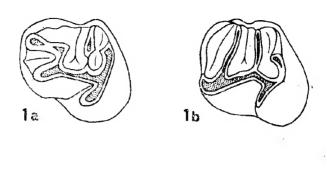


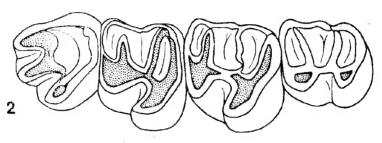
图 1. Anomoemys, Pareumys 和 Prosciurus 上颊齿

1. Anomoemys lohiculus, 正型标本,左 P³-M², AMNH No. 19100,依 Matthew & Granger, 1923, fig. 8; 2. Pareumys lewisi,正型标本,左 M¹-M³, CM 14407,依 Black, 1974, fig. 6; 3. Prosciurus relictus,右 P³-M³, UCMP 36444,依 Rensberger, 1975, fig. 5a(翻转)

已齿和乳齿趋向于保持古老的特征"。也就是说,DP⁴ 具前附尖和 DP₄ 具下后脊 I 可能代表 cylindrodontids 的原始特点。 这一特点在已知的 cylindrodontids 的 P⁴ 和 P₄ 中已失去,只是 Pseudocylindrodon 的P₄ 还具有下后脊 I 的痕迹 (Black, 1936, p. 145),而在 Anomoemys 的 P⁴ 和 P₄ 上保留了下来。Anomoemys 除了在保留这一原始特点上不同于其他的 cylindrodontids 外,在衍生性状上几乎与 Cylindrodontidae 的完全一致。与此相反,Anomoemys 在 P⁴ 具前附尖这一较原始特点上虽与 Prosciurus 的相似,但彼此的衍生性状却很不相同。因此,将 Anomoemys lohiculus 从 Aplodontidae 中排除,而归入 Cylindrodontidae 科似乎更合理些。

亚洲渐新世的 cylindrodontids 过去已知两类: 一类是 Tsaganomyinae, 它代表亚洲特





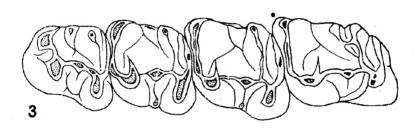


图 2. Anomoemys, Pseudocylindrodon 和 Prosciurus 下颊齿

1. Anomoemys lohiculus, la, left P4, Z. Pal. MgM-III/74, 依 Kowalski, 1974, Pl. XLIII, fig. 7; b, right M1, Z. Pal. MgM-III/72(翻转), 依 Kowalski, 1974, Pl. XLIII, fig. 5; 2. Pseudocylindrodon neglectus,正型标本 left P4-M3, USNM 13758, 依 Burke, 1935a, fig 1; 3. Prosciurus relictus, 正型标本 left P4-M3, AMNH No. 5360, 依 Wood, 1937, fig. 12

有的土著类型;另一类 Cylindrodontinae 的 Pseudocylindrodon 和 Ardynomys。这后两属都是与北美共有的,表明 Cylindrodontidae 在早、中渐新世时在亚洲与北美之间存在交流。如果上述将 Anomoemys lohiculus 归入 Cylindrodontidae 科的分析是正确的话,它显然代表从 Cylindrodontidae 主干分出的较原始的一类。这说明,亚洲渐新世时至少存在三类 cylindrodontids。 Pareumys lewisi 也有可能属于这第三类。

综上所述,根据规范要求作如下记述:

Cylindrodontidae Miller & Gidley, 1918 异鼠(新鳳) Anomoemys gen. nov.

属型种 Anomoemys lohiculus (Matthew & Granger), 1923

分布 中国内蒙古和蒙古人民共和国,中渐新世。

属的特征 颊齿单面高冠,四条横脊都较发达,几乎等高;原尖前后伸长,磨蚀后呈纵脊状,与前、后边脊相连续,无游离的原尖前臂;前尖和后尖不很明显;原小尖和后小尖明显;后脊不完全,有纵脊连接原脊、后小尖和后边脊;P' 具前附尖; P_{\bullet} 具下后脊 I;下颊齿三角座开阔而封闭,下后附尖脊发达,下后脊 II 完全,伸向后内方;下外脊直;下次尖高冠,主要伸向前唇侧,下次小尖明显。

名称来源 Anomoios,不相似的,不一样的(希腊文)。

洛异鼠 Anomoemys lohiculus (Matthew & Granger), 1923

Prosciurus lohiculus Matthew & Granger, 1923, p. 7, fig. 8; Prosciurus lohiculus Teilhard de Chardin & Leroy, 1942, p. 25; Prosciurus? lohiculus, Stehlin & Schaub, 1951, p. 110, fig. 159; Plesis permo philus lohiculus (partim), Wood, 1962, p. 236, fig. 87D; ?Plesis permo philus lohiculus, Mellett, 1968, p. 6, 8 et 10; Prosciurus lohiculus, Kowalski, 1974, p. 152—154, pl. XLIII(4—7); Plesis permo philus lohiculus (partim), Shevyreva, 1976, p. 22, fig. 3 r.

正型标本 左上颌具 P3-M3 (AMNH No. 19100)

归人标本 左上颌具 P⁴—M³ (古脊椎动物与古人类研究所标本编号V 7956),右上颌具 P⁴—M³ (No. MgM-III/73),左下颌具 P₄ (No. MgM-III/74),左下颌具 M₁ (No. MgM-III/71/1), M₃ (No. MgM-III/71/2) 和右下颌具 P₄ 和 M₁ (No. MgM-III/72)。

分布 中国内蒙古和蒙古人民共和国,中渐新世。

种的特征 同属的特征。

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ON THE SYSTEMATIC POSITION OF PROSCIURUS LOHICULUS

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Key words Asia; Oligocene; Cylindrodontidae, Aplodontidae

Summary

The species Prosciurus lohiculus was erected by Matthew & Granger (1923), based on an upper jaw from Hsanda Gol Formation (Middle Oligocene), Mongolia. Later, Argyropulo (1939) described a lower jaw from the upper Oligocene of Kazakhstan, USSR, which was identified as Prosciurus sp. (lohiculus). Stehlin & Schaub (1951, p. 278) thought that the Kazakhstan lower jaw described by Argyropulo should belong to Plesispermophilus, leaving the holotype of P. lohiculus from Hsanda Gol Formation still in Prosciurus. Wood (1962, p. 236) transferred P. lohiculus into Plesispermophilus on the assumption that the Kazakhstan lower jaw belongs to the same form as the holotype from Hsanda Gol. Wood's opinion was followed by Mellett (1968, p. 6) and Shevyreva (1976, p. 22). Meanwhile, Kowalski (1974, p. 153) described several lower jaws, new material from the type locality, and believed they belongs to Prosciurus lohiculus and came to the conclusion that the Kazakhstan lower jaw was morphologically quite different from those he found in Tatal Gol, and hence could not belong to the species in question. Schmidt-Kittler and Vianey-Liaud (1979; p. 73) agreed with Kowalski and gave further

evidence that the upper teeth of true *Plesis permophilus* was also different from those of *P. lo-hiculus* and that the lower jaw from Kazakhstan might well be of *Plesis permophilus*. Irrespective of these disagreements, all the authors consented to include *P. lohiculus* in Prosciurinae (Aplodontidae).

During the study of the fossil aplodontids from the Oligocene of Nei Mongol, China, the author made comparison of the casts of the holotype of *Prosciurus lohiculus* (AMNH no. 19100), the specimens described by Kowalski (1974) and by Argyropulo (1939), and some specimens and casts of the genus *Prosciurus* of North America and other closely related forms. Thorough comparison of these materials reveals that 1) the lower teeth from Kazakhstan described by Argyropulo (1939) could not belong to the same form as the upper teeth of *P. lohiculus*, but is similar to those of *Plesis permophilus*; on the contrary the lower jaws described by Kowalski (1974) are quite probably attributable to *P. lohiculus*; 2) *P. lohiculus* as defined by Kowalski belongs neither to *Plesis permophilus* [as Schmidt-Kittler et al. (1979) did] nor to true *Prosciurus*; nor can it belong to the Aplodontidae at all.

Morphologically *P. lohiculus* is rather similar to *Prosciurus indeed*. That is why *P. lohiculus* was assinged to *Prosciurus* by many authors. However, detailed comparison reveals the following distinct characters of *P. lohiculus* from true *Prosciurus*: 1) Its upper teeth are unilaterally hypsodont; 2) Protocone extends antero-posteriorly, wear surface of protocone-hypocone area of upper teeth aligned antero-posteriorly; 3) Protocone is connected with the anteroloph and posteroloph uninterruptedly; 4) No free anterior arm of protocone, a typical character of Aplodontidae; 5) Transverse lophs developed, both anteroloph and posteroloph are as high as the developed protoloph and metaloph, so their wear surfaces are on the same level; 6) Protoloph joins the central part of protoconule, and metaloph connects the central one of metaconule, while in *Prosciurus* the protoloph joins the protoconule at its posterior border and metaloph joins the metaconule at the anterior border; 7) Paracone and metacone compressed antero-posteriorly, forming transverse crests; 8) On upper teeth there exists a longitudinal crest connecting metaconule with protoloph and posteroloph. These differences show that *P. lohiculus* represents a new genus distinct from *Prosciurus*: *Anomoemys* gen. nov.

It is necessary to point out that Anomoemys is quite different from all aplodontids in the characters listed above as well. Therefore Anomoemys is to be excluded from the Aplodontidae.

Anomoemys is similar to sciurids and cylindrodontids in tooth formula and morphology. Early in 1923, the similarity between Anomoemys and sciurids in cheek teeth was pointed out by Matthew and Granger. However, their skulls are drastically different. It is obvious that they are representatives of different groups.

Comparison of the upper teeth of Anomoemys with those of cylindrodontids shows that Anomoemys and cylindrodontids possess some characters in common which are not shared by Prosciurus. In addition, Anomoemys is also similar to primitive cylindrodontids, such as Pareumys, Jaywilsonomys and primitive Pseudocylindrodon (P. tobeyi), in incomplete metaloph and connection of metaconule and posteroloph. It is interesting that Pareumys lewisi Black (1974, p. 155—156) also has a longitudinal crest connecting metaconule with protoloph and posteroloph just as Anomoemys does. In this way Anomoemys differs from known cylindrodontids only in possessing a parastyle on P⁴.

It holds true for the lower teeth as well. In Anomoemys the lower teeth are with hypoconid hypsodonty; transverse lophids are almost equal to each other in height; ectolophid is stra-

ight; both mesoconid and ectolophid are absent; metaconid does not extend forwards; protoconid is located at the anterior border of the teeth and is not procumbent but vertical; metalophid I straight; metalophid II complete; and hypoconid extends antero-externally. All these characters are shared by cylindrodontids, especially *Pseudocylindrodon* and *Ardynomys*, but neither by *Prosciurus* nor by Aplodontidae. *Anomoemys* differs from known cylindrodontids only in possessing a more or less distinct metalophid I on P₄.

As pointed out above the main distinction between Anomoemys and known cylindrodontids is that Anomoemys possesses parastyle on P⁴ and metalophid I on P₄. However, these characters occur in the deciduous teeth DP⁴ and DP₄ in cylindrodontids as well. Butler (1941, p. 444) stated: "In the evolution of the dentition the teeth that are functionally the most important have been the most progressive, while the anterior premolars and milk molars, which are functionally the least important, have tended to retain archaic characters." It means that the parastyle of DP⁴ and metalophid I of DP₄ may be primitive characters of cylindrodontids. These primitive characters are lost on P⁴ and P₄ of known cylindrodontids and only a vestige of metalophid I of P₄ still remains in Pseudocylindrodon, but they are still kept on P⁴ and P₄ in Anomoemys. So, except for the primitive characters, Anomoemys is similar to cylindrodontids in all derived characters. On the contrary, between Anomoemys and Prosciurus the similarity is restricted only to primitive characters, and they differ in derived characters. So, Anomoemys is to be classified as a cylindcodontid rather than Aplodontidae.

So far only two cylindrodontid groups (Tsaganomyinae and Cylindrodontidae) have been known in Asia in the Oligocene time. If it is true that *Anomoemys* belongs to Cylindrodontidae, it may represent a third group which split from the very base of the cylindrodontid stem. It seems also possible that *Pareumys lewisi* belongs to this third group.

Cylindrodontidae Miller & Gidley, 1918 Anomoemys gen. nov.

Type species Anomoemys lohiculus (Matthew & Granger), 1923.

Range Middle Oligocene of Nei Mongol, China, and The People's Republic of Mongolia.

Diagnosis Cheek teeth unilaterally hypsodont, four transverse lophs developed and almost equal to each other in height, protocone extends antero-posteriorly, wear surface of protocone-hypocone area of upper teeth aligned antero-posteriorly; no free anterior arm of protocone; paracone and metacone indistinct; protoconule and metaconule distinct; metaloph incomplete; the presence of a longitudinal crest connecting metaconule with protoloph and posteroloph; P⁴ with parastyle; P₄ with metalophid I; lower cheek teeth trigonid broad and closed, metastylid developed, metalophid II extends postero-internally and is complete, ectolophid straight, hypoconid hypsodont and extends antero-externally, hypoconulid distinct.

Anomoemys lohiculus (Matthew & Granger), 1923

Prosciurus lohiculus Matthew & Granger, 1923, p. 7, fig. 8; Prosciurus lohiculus, Teilhard de Chardin & Leroy, 1942, p. 25; Prosciurus lohiculus, Stehlin and Schaub, 1951, p. 110, fig. 159; Plesispermophilus lohiculus (partim), Wood, 1962, p. 236, fig. 87D; iPlesispermophilus lohiculus, Mellett, 1968, p. 6, 8, 10; Prosciurus lohiculus, Kowalski, 1974, p. 152—154, Pl. XLIII, 4—7. Plesispermophilus lohiculus (partim); Shevyreva, 1976, p. 22, fig. 32.

Holotype Left upper jaw with P³-M² (AMNH No. 19100).

Referred specimens Left upper jaw with P⁴-M³ (IVPP V 7956), right upper jaw with P⁴-M³ (No. MgM-III/73), left lower jaw with P₄ (No. MgM-III/74), left lower jaw with M₁ (No. MgM-III/71/1), M₃ (No. MgM-III/71/2) and right lower jaw with P₄ and M₁ (No. MgM-III/72).

Range Middle Oligocene of Nei Mongol (Inner Mongolia), China, and The People's Republic of Mongolia.

Diagnosis The same as the diagnosis of the genus.